State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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November 14, 1997

TO: Minerals File

FROM: Tony Gallegos, Reclamation Engineer

RE: Site Inspection, PCS - Moab Salt, Cane Creek Mine, M/019/005, Grand County, Utah

Date of Inspection: November 4, 1997
Time of Inspection: 0805 - 1150
Conditions: Clear skies, warm
Participants: Rick York and Rick Cline, Moab Salt; Will Stokes, SITLA; Tony Gallegos and Tom Munson, DOGM

Purpose of Inspection: To examine the current status of the mining operations

Prior to the field inspection, Mr. Cline and Mr. York provided a general overview of the mine operations using maps and aerial photos at the mine office. At this time, Moab Salt has two wells which are open; one well is used for extraction of brines and one well is used for injection of brines. At this time they anticipate the life of the mining project will be another ten years. They explained that until about 1972 the operations removed salt from the underground workings and then placed this salt on the surface. For the past several years Moab Salt has been dissolving this salt dump and injecting the saturated brines into the mine. This has allowed them to clean up this salt dump on the surface and use the saturated brines to continue mining potash. Moab Salt has been able to market some of their waste salt which is low in trace metal impurities. This makes their salt more desirable for certain chemical processes.

We discussed the proposed oil and gas well, which is to be located approximately 1,500 feet from the border of the old underground workings. Moab Salt is working out a surface agreement to allow the drilling company to use a 2-3 acre area for the well. An issue of a pipeline across Moab Salt property is something which remains to be worked out. The Moab Salt operation is located on private surface with state mineral. The oil and gas well is expected to be drilled late this winter or early this coming spring.

Since the Moab Salt operation is ten years out from the end of the mine life, we discussed some of the general reclamation requirements or tasks that will need to be performed at this site. Rick York mentioned that as part of reclamation, they will need a landfill site to dispose of the hypalon liners from the ponds, and the concrete and metal debris from the demolition of the structures at the mine site. One possible location for a landfill would be near the dam for the waste salt area.

The ponds at Moab Salt were built around 1970. These were built with a PVC liner and hypalon berm. They are unsure of what is beneath the pond liners and what they may have to deal with when they reclaim these ponds. Beneath the ponds may be some sands or salt crusted soils. There are sumps located beneath the ponds to deal with springs and seeps that were found after the ponds were built.. At final reclamation they will also need to deal with the disposal of brines from desalinization of the waste salt. One option they will be considering is the use of salt injection or disposal wells where they would inject this brine back into the underground workings.

Another issue to deal with at final reclamation will be what to do with retention dams after the salt has been removed. Moab Salt is wondering how long they would have to retain runoff after reclamation has been complete. That is, how long would they have to maintain these dams, pump back systems, etc. They expect to be finished with the removal of the waste salt in approximately seven years. Moab Salt is looking into the possibility of a postmine land use for the property and the facilities at the plant site. They own approximately 230 acres in this area.

Moab Salt has been working with representatives or consultants from Cedar Creek Associates at Fort Collins, to look at salt tolerant plants and work on a reclamation seed mix. Moab Salt has seen some natural invasion of plants onto areas which were rinsed of salt. In general, halogeton comes in within one year, and other more desirable species such as shade scale come in two years or more after the areas have been rinsed. Moab Salt has a number of inactive well sites which have been cleaned up and are ready to be seeded. Some of the access roads to these well sites are revegetating naturally. They are looking at using some of these test seed mixes on some of these well sites to see how well they perform.

They recently had a group representing a salinity forum visit the Moab Salt operations. Members of this forum included representatives the various states using the Colorado River water.

Due to the unusually heavy rains this area received this year, Moab Salt had a flash flood which washed over the dam below the collection sumps for the ponds. The floods also washed out certain sections of Moab Salt and county roads.

After the office discussions we visited the different areas of the site. The first area visited was the possible landfill site at the dam. Photographs were taken of this area. One proposal is to place the waste on the right side of the area looking upstream from the dam, and reconstruct the channel so the natural drainage would flow through the left side of this area. This would take place after the dam was not needed for dissolving salts.

We then visited the pond area. One pond was currently being harvested by a scraper. The scraper was cycling from picking up potash salts from the pond and dumping into a grate where it was mixed with water and piped back to the plant for processing. We briefly visited the collection sumps for the ponds before returning to the office.

The inspection ended with a brief wrap-up at the mine site to discuss what the Division would do and what Moab Salt would do. The Division needs to complete the final permit approval. A draft final approval letter was left with Moab Salt for review. The Division and Moab Salt would then discuss the remaining permit issues to be resolved, if any, prior to final approval. It was suggested that Moab Salt wait until this final approval is issued before providing a proposed reclamation plan.

jb
cc: Rick York, Moab Salt
Will Stokes, SITLA
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